APTICOM | ASA-7297X

SFP GE CWDM 80km -20-85°C Optical Transceivers

Features

- Management interface specifications per SFF-8074i and SFF-8472
- Supports up to 1.25Gbps bit rate
- Class 1 Laser Safety Certified
- CWDM DFB Transmitter
- PIN Receiver
- Up to 80km on Single Mode Fiber (SMF)
- Operating Temperature -20 to 85°C
- Power dissipation ≤1.5W
- Single 3.3V power supply

Applications

- Gigabit Ethernet
- 1x Fiber Channel

Description

The ASA-7297x series are high-performance transceivers for up to 1.25Gbps CWDM 80km links over dual single mode fiber. It is compliant with the Small Form-factor Pluggable (SFP) Multisource Agreement (MSA) and hot pluggable.

The transceiver module is RoHS-6 compliant per Directive 2011/65/EU.

CAUTION! The transceiver is a static-sensitive device. Always use an ESD wrist strap or similar individual grounding device when handling transceiver modules or coming into contact with modules.

Order Information

Part Number	Wavelength	Protocol	Tx Output Power	Rx Sensitivity [1]	Reach [2]	Temp.
ASA-7297x	ITU CWDM	1000BASE	0 to 5dBm	≤-26dBm	≤80km	-20-85°C

1. Measured with 1.25Gbps PRBS 2^7-1, ER=9dB, BER≤10^-12 **2.** On standard single-mode fibre (SMF, G.652)

Channel Guide (ITU-T CWDM)

Part Number	Wavelength [nm]	Part Number	Wavelength [nm]
ASA-72971	1471	**ASA-72975**	1551
ASA-72972	1491	**ASA-72976**	1571
ASA-72973	1511	**ASA-72977**	1591
ASA-72974	1531	**ASA-72978**	1611

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

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Parameter	Min	Typ	Max	Unit
Storage Temperature	-40		85	°C
Relative Humidity	5		95	%
Supply Voltage	-0.5		4.0	V

Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
Operating Case Temperature	-20		85	°C
Supply Voltage	3.135	3.3	3.465	V
Data Rate, Optical Lane		1.25		Gbps

Transceiver Electrical Parameters

EOL, over the full temperature range, Vcc = 3.135 to 3.465V.

Parameter	Min	Typ	Max	Unit
Supply Current			450	mA
Power Dissipation			1.5	W
Transmitter				
Input Differential Impedance		100		Ω
Differential Data Input Swing	300		2200	mVpp
Tx_Fault (fault condition) [1]	2.0		Vcc	V
Tx_Fault (normal operation) [1]	0		0.8	V
Tx_Disable (transmitter disable)	2.0		Vcc	V
Tx_Disable (normal operation)	0		0.8	V
Receiver				
Output Differential Impedance		100		Ω
Differential Output Data Swing [2]	600		1200	mVpp
Rx_LOS (loss of signal) [1]	2.0		Vcc	V
Rx_LOS (normal operation) [1]	0		0.8	V

1. Open collector, to be pulled upp with 4.7kohm **2.** Internally AC-coupled, to be terminated with 100ohm differential load

Transmitter Optical Specification

EOL, over the full temperature range, Vcc = 3.135 to 3.465V.

Parameter	Min	Typ	Max	Unit
Launched Optical Power, Average [1]	0		5	dBm
Centre Wavelength Range	1464.5		1617.5	nm
Centre Wavelength [2]	λ-6.5	λ	λ+6.5	nm
Spectral Width (-20dB)			1	nm
Extinction Ratio	9			dB
Rise/Fall Time (20/80%)			260	ps
Dispersion Penalty			2	dB

1. Coupled into 9/125um SMF **2.** λ according to ITU-T G.694.2 CWDM 20nm grid

Receiver Optical Specification

EOL, over the full temperature range, Vcc = 3.135 to 3.465V.

Parameter	Min	Typ	Max	Unit
Operating Wavelength	1464.5		1617.5	nm
Receiver Sensitivity, Average Power [1]			-26	dBm
Receiver Overload	-3			dBm

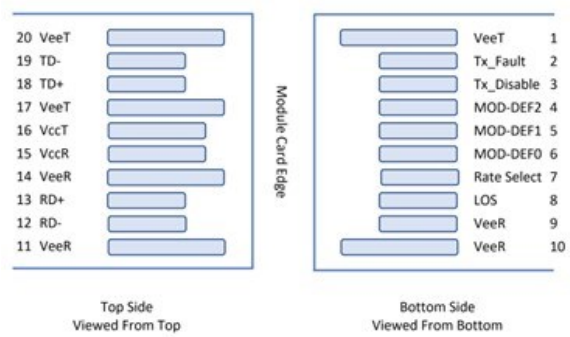
1. Measured with 1.25Gbps PRBS 2^7-1, ER=9dB, BER≤10^-12

Transceiver Pins

Pin #	Name	Description	Pin #	Name	Description
1	VeeT	Module Transmitter Ground	11	VeeR	Module Receiver Ground
2	Tx_Fault	Module Transmitter Fault	12	RD-	Receiver Inverted Data Output
3	Tx_Disable	Transmitter Disable	13	RD+	Receiver Non-Inverted Data Output
4	MOD-DEF2	Module Definition 2	14	VeeR	Module Receiver Ground
5	MOD-DEF1	Module Definition 1	15	VccR	Module Receiver 3.3 V Supply
6	MOD-DEF0	Module Definition 0	16	VccT	Module Transmitter 3.3 V Supply
7	Rate Select	Not Used	17	VeeT	Module Transmitter Ground
8	LOS	Loss of Signal	18	TD+	Transmitter Non-Inverted Data Input
9	VeeR	Module Receiver Ground	19	TD-	Transmitter Inverted Data Input
10	VeeR	Module Receiver Ground	20	VeeT	Module Transmitter Ground

Transceiver Pad Layout

SFP-compliant 20-pin connector as per INF-8074.



Regulatory Compliance

The ASA-7297x series of transceivers are Class 1 Laser Products and certified per the following standards:

Item	Agency	Standard
Laser Eye Safety	TÜV	EN 60825-1:2014 EN 60825-2:2004+A1+A2
Electrical Safety	TÜV	EN 60950-1:2006+A11+A1+A12+A2

Revision Information

Revision	Date	Description
A	2023-05-17	Initial release

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